Sory Rodriguez

Water, Energy, and Waste: Integrating Themes of Sustainability into Your Classroom

NY Sun Works

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Final

**Science Lesson Plan**

**Title:** Persuading Others to Protect our Water Resource

**Subject/Topic:** Science/Water Pollution

**Grade Level:** Second Grade

**Time/Duration:** 2 days

**Teacher:** Ms. Rodriguez

**Goals:**

The purpose of this lesson is to motivate students to analyze their own behavior and decisions, which they’ll make about water pollution. After adding liquids and observing plants for 5 days, they will write persuasive letters, flyers and posters explaining why water conservation is so important and what we can do at school, home, and in the community to avoid water pollution the best that we can in a responsible way.

**Objectives:**

Students will be able to:

* Use collected data and previous knowledge from plants observation to make conclusions about water pollution and the environment. *(Synthesis, Evaluation)*
* Have group discussions about water pollution and conservation. *(Comprehension)*
* Explain different ways we can stop or avoid pollution. *(Analysis, Synthesis)*
* Write a persuasive letter, make a flyer or poster explaining what water pollution is and how to conserve water. *(Comprehension, Evaluation)*

**Standards Addressed:**

***Science: Scope and Sequence***

* ***LE 1.1b*** Describe the basic needs of plants: Light, air, water, soil (nutrients)
* ***LE 1.1b, LE 1.2a, LE 4.1b, LE 5.1a*** Describe the basic life functions of plants: Grow, take in nutrients, reproduce.

***ELA***

* [***W.2.1***](http://www.corestandards.org/ELA-Literacy/W/2/1/) Write opinion pieces in which they introduce the topic or book they are writing about, state an opinion, supply reasons that support the opinion, use linking words (e.g., *because*, *and*, *also*) to connect opinion and reasons, and provide a concluding statement or section.
* [***W.2.2***](http://www.corestandards.org/ELA-Literacy/W/2/2/) Write informative/explanatory texts in which they introduce a topic, use facts and definitions to develop points, and provide a concluding statement or section.
* ***W.2.5*** With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.
* [***L.2.1***](http://www.corestandards.org/ELA-Literacy/L/2/1/) Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
* [***SL.2.6***](http://www.corestandards.org/ELA-Literacy/SL/2/6/) Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification. (See grade 2 Language standards 1 and 3 [here](http://www.corestandards.org/ELA-Literacy/L/2) for specific expectations.)
* [***SL.2.4***](http://www.corestandards.org/ELA-Literacy/SL/2/4/) Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.
* ***W.2.6*** With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.
* ***SL.2.1*** Participate in collaborative conversations with diverse partners about *grade 2 topics and texts* with peers and adults in small and larger groups.
* [***W.2.8***](http://www.corestandards.org/ELA-Literacy/W/2/8/) Recall information from experiences or gather information from provided sources to answer a question.

***Arts***

*Standard 1: Creating, Performing and Participating in the Arts*

Students will actively engage in the processes that constitute creation and performance in the arts (dance, music, theatre, and visual arts) and participate in various roles in the arts.

*Standard 2: Knowing and Using Arts Materials and Resources*

Students will be knowledgeable about and make use of the materials and resources available for participation in the arts in various roles.

***Blue Print Visual Art***

**2nd Grade Art Making**

Benchmark- Through an exploration of art materials and techniques, students exercise imagination, construct meanings, and depict their experiences; work in two-dimensional and three-dimensional art forms, use basic art tools, and gain knowledge of media and

compositional elements.

**2nd Grade- Making Connections Through Visual Arts**

Benchmark- Students recognize the societal, cultural, and historical significance of art; connect the visual arts to other disciplines; apply the skills and knowledge learned in visual arts to interpreting the world.

**Charlotte Danielson’s Framework for Teaching:**

Domain 3: Instruction-

* Competency 3b-Using Questioning and Discussion Techniques
* Competency 3c- Engaging Students in Learning
* Competency 3d- Using Assessment in Instruction

**Prior Knowledge:**

For students to do this lesson they need to be able to:

* Identify the basic needs of plants such as air, water, and light.
* Explain and understand how living things grow and change.
* Observe and compare the parts of a plant that enables it to live and grow.
* Understand that changes in the environment affect plants in different ways (e.g., seasonal changes).
* Explain some of the properties of liquids, gases and solids.
* Write an opinion letter using information learned before.

**Materials:**

\**Teacher should prepare materials ahead of time.*

* Writing paper or graphic organizer OREO, Foursquare, etc.
* Chart paper and markers.
* Students’ worksheets with evidence collected during the investigation (They can use this information to support their points in the letter, poster and flyers).
* Pencils.
* Coloring pencils, markers, crayons.
* Envelopes (optional).
* Posters.
* Paper to create flyers (can be done on a computer).
* Art Materials (for students to create their posters).
* Computers.
* Projector/ELMO (optional).

**Vocabulary:**

* **Persuade:** when you convince someone to do something or believe in something.
* **Conserve:** to protect by using carefully or sparingly, avoiding waste

**Lesson Overview:**

This lesson is a continuation of the *Water Pollution Effects on Plants* investigation students took part of for 5 days where they collected data and facts about their plants after adding liquids outside of water, such as: vinegar, cooking oil, and dish soap. After completing the investigation and learning about water pollution and how this affects all living things and the environment, students will have the opportunity to show their learning. They will express their feelings, thoughts and most of all their knowledge about water pollution by writing persuasive letters, creating posters with a variety of art materials, and/or flyers explaining what steps we should take to protect the environment keeping in mind the topic of sustainability.

**Lesson Procedure:**

**Introduction/Motivation:**

Teacher calls students to the rug. Then, he/she pretends to be sad or even crying and says,

*“Oh my! I am so sad. We completed our investigation and most of our plants are dead. What are we going to do to not kill more plants? Is this happening to other plants out there in the community? In the world?*

Teacher listens to and/or writes their comments.

**Main Activity/Procedures-**

Teacher will tell students that they will be creating persuasive letters, flyers and posters to convince people to stop wasting water and polluting and to conserve water.

*“Everything you mentioned gave me a great idea. Today we are going to write persuasive letters and create posters and flyers to let people know about the importance of keeping the water clean and things they can do to conserve water. Persuasive is when we try to convince others to do something. As we know water is very important for all living things to survive and most of all it is a limited resource. This is why we need to persuade other people to make sure they understand how important it is for us to keep our water clean and not waste it. Let’s create a list so we can get ideas and start working on our letters, posters and flyers.”*

Teacher models to show how to complete the table.

|  |  |
| --- | --- |
| ***Polluting and Wasting Water*** | ***Ways to Conserve Water*** |
| *1. When we throw garbage in the rivers.*  *2.* | *1. Take a short bath.*  *2.* |

*“Let’s see…One way to pollute water is by throwing garbage in the river. And one way to conserve water is by taking a short bath.* (Teacher writes this information in the table).

*Now, it is your turn. Close your eyes and think about what people do to waste and pollute water.* (Teacher waits a few seconds.) *Now, think about ways we can conserve water.* (Teacher waits a few seconds.)

*Turn and tell your partner what people do to waste and pollute water and ways we can conserve water.”* (Teacher points to the table for students to remember and understand what he/she is asking them to talk about.)

Then, the students share their ideas and help the teacher fill in the table. The information on the table will be used to give ideas to students to write their persuasive letters and to create exciting posters and flyers.

Students will decide what they want to do. They can choose between writing a persuasive letter and/or creating a poster or a flyer. Also, they can work in groups or individually. Depending on the class, teacher can make groups to complete these activities.

While students are working, the teacher can ask the following questions to check for students’ understanding and to try to understand their thinking and how they are making connections with what they learned before. Also, these questions can help with feedback for students and teacher:

* Why did you make that statement in your letter?
* What can you do to convince your audience about not wasting water?
* Do you think people will understand the message you are trying to bring across? Why do you think that?
* Why did you include that factor in your letter/poster/flyer? Is it important? Why?
* Can you explain your picture/drawing?

**Differentiated Instruction-**

These differentiated activities are to help students make connections and use their prior knowledge providing additional experience or support for them to understand the concept being taught during the lesson.

* Students can choose to work in groups or individually. This will allow them to feel ownership and might get engaged in the activity a lot more.
* Students can record a video about the topic of water pollution and conservation.
* Students with writing difficulties can record their voices.
* Two or more classes can work together to increase awareness and even a contest can be made.
* Students can use the writing process to write their letters.
* Students can use graphic organizers to brainstorm before writing the persuasive letters.

**Conclusion-**

Students will gather on the rug area. The teacher will call on some students to share their work and findings and to explain their persuasive letters, posters and flyers. To provide feedback, the teacher can comment on the work of some students and how they make a great statement for other people in the school and in the community to start thinking about their choices to conserve water and not pollute it.

At the end of the lesson, students should understand that they can make a difference to the world by being an example and showing others that caring for our water resources and other natural resources will benefit us all and that sustainability is the best way to go to protect our planet.

To conclude the lesson, the teacher can review what was learned by asking students,

* What did you learn today?
* Why did you choose that particular project (letter, poster or flyer)?
* How will your project impact the school community?
* Would you make any changes in your project? Yes/No. Why?

**Assessment:**

To assess the students, I will confer with them and take specific notes about each child. I will pay attention to their performance, contributions, communication skills, representation and how they make connections by observing and listening to their ideas and looking at their work in groups and as individuals.

I will use questions such as the ones listed below to check their understanding of the concept learned. For example:

* Is the student able to understand and make connections with the concept learned?
* Can he/she work in a group and use the materials efficiently?
* Is the persuasive letter supported by facts and opinions?
* Is the flyer or poster creative?
* How are the students working together?
* Is the student having discussions and communicating his/her ideas clearly?
* Is the student following the steps/rules? Individually?
* What strategies is the student using to show his/her work?

**Additional Resources:**

1. Water Awareness Month Poster Contest

<http://www.soquelcreekwater.org/content/water-awareness-month-poster-contest>

1. Sesame Street: Water Conservation

<http://www.youtube.com/watch?v=gtcZbN0Z08c>

1. Easy Ways Kids Can Conserve Water

<http://www.youtube.com/watch?v=0Am9JPfuNsw>

1. Worksheets and charts to write opinion/persuasive letters. *(See below)*

